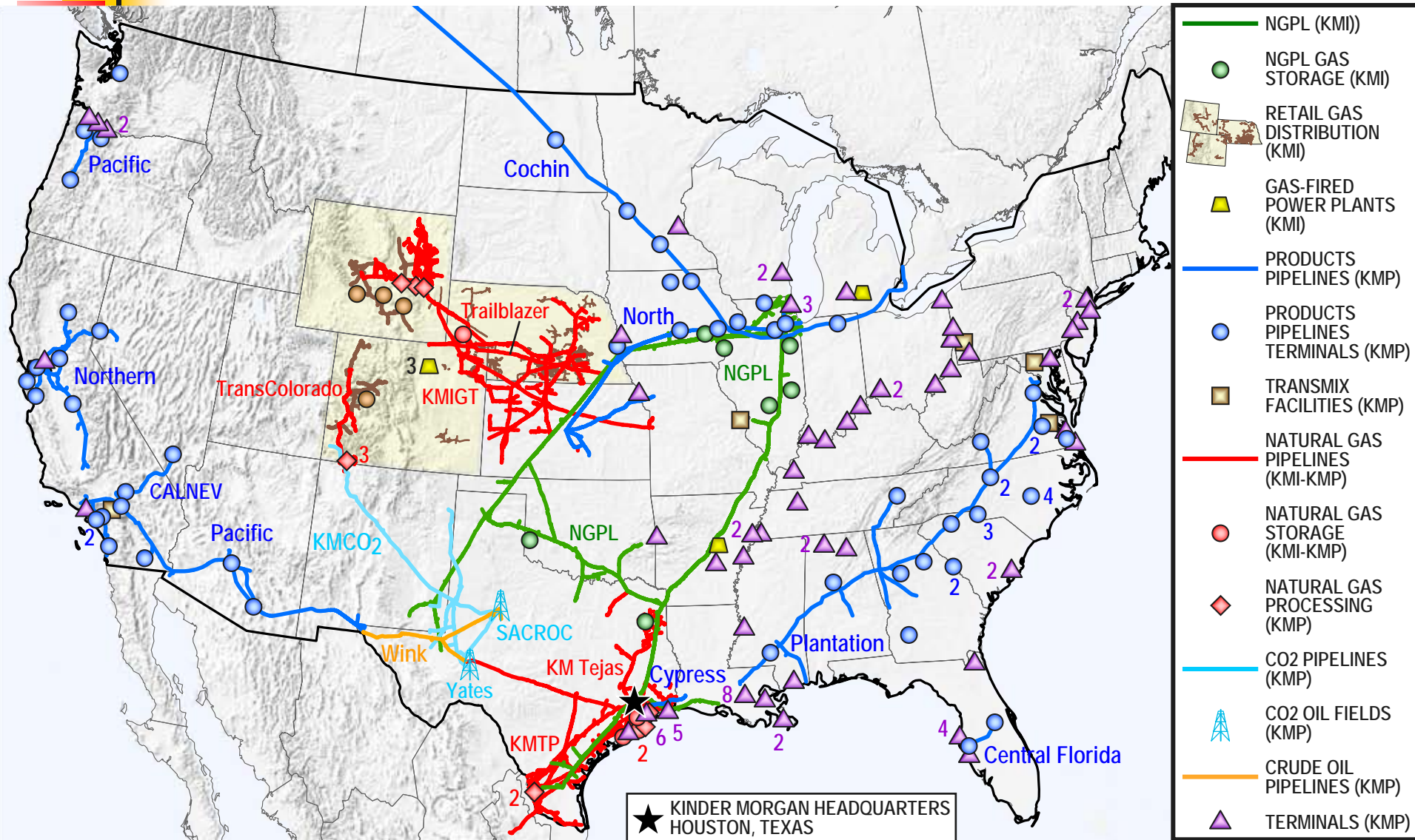




Natural Gas STAR Program Implementation at Kinder Morgan Inc.

Thomas J. Bach
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Kinder Morgan System Map





Implementation Plan

- BMP 1: I&M at Compressor Stations and Processing Plants
 - Proposed Frequency – 1/3 annually
 - 170 Total Facilities (~56 per year)
 - 43 facilities have been inspected



Implementation Plan (cont.)

- BMP 2: I&M at Gate Stations and Surface Facilities
 - Transmission & Storage Facilities
 - Meter Facilities \geq 6 inch
 - Proposed Frequency – 20 % annually
 - Distribution Facilities
 - All Town Border Stations - 122
 - Proposed Frequency – 33 % annually
 - 33 % sites inspected



Implementation Plan (cont.)

- BMP 3: Use of Turbines or Electric Compression Instead of Reciprocating Engines
 - Consider turbines if they meet compression selection requirements (fuel consumption, elevation derating, system design, operational flexibility, etc.)
 - Replaced 15,000 HP in 2004 with electric motors



Implementation Plan (cont.)

- BMP 4: Identify and Fix Leaky Piping
 - Repair all leaks within calendar year
 - Track all identified leaks
 - Attempt to repair leaks within 60 days
 - 38 of 39 identified leaks repaired
 - Repair approximately 50 miles of pipe annually (first four years in program)



KMI Implementation of PRO's

- Reduce pressure or bleed down pipelines to minimize gas venting
- Implement non-blow down pipeline repair methods
- Hot taps used for In-service Pipeline Connections when appropriate



Implementaion

- Implementation Team
 - Senior Management commitment
 - EHS, Operations & Retail joint implementation teams
 - Corporate Managers
 - Regional Technical Managers
 - Measurement Technicians
 - Operations Technicians



Implementation Technologies

- Initial pilot studies conducted in 2004 with thermal imaging camera
- Currently using ultrasonic, flame ionization, thermal imaging and remote laser leak detection methods
- Pilot studies being conducted in 2005 with FLIR GasFindIR camera
- Intend to purchase a FLIR GasFindIR camera in 2006



2004 Accomplishments

BMP/PRO	Annual Mcf Saved	Gas Value	Implement. Cost
Distribution Pipe Replace.	3,743	\$ 18,715	\$ 0.00
Comp. Station I&M	70,992	\$ 354,960	\$ 0.00
Portable Compressors	405,670	\$ 2,028,350	\$ 517,861
Electric Motor	31,650	\$ 158,250	Other Business Reasons
Totals	512,055	\$ 2,560,275	\$ 517,861



Concluding Comments

- 512,000 mcf saved in 2004
- 2005 Program implementation progressing (overall > 50 % complete)
- Seeking Guidance regarding incorporating Distribution routine leak repairs into Program
- Evaluating measures to expand current program